

ZEMSKOV, V.A. (Leningrad); MAKAR'YEV, B.M. (Leningrad)

Improvement of the characteristics of automatic control systems of  
a certain class using nonlinear control signs. Izv. AN SSSR.  
Tekh. kib. no.6:60-71 N-D '63. (MIRA 17:4)

88343

S/024/60/000/006/010/015  
E031/E413

The Investigation of Free Oscillations in Non-Linear Automatic Control Systems Using Logarithmic Frequency Characteristics

system of the form NL. For convenience the non-linear elements are divided into those with and those without hysteresis loops in their characteristics. The necessary conditions for the occurrence of auto-oscillations is the existence of general points on the curves of the logarithmically equivalent admittance and characteristic functions of the system. If these general points do not exist, this can be regarded as a sufficient condition for the absence of auto-oscillations. Systems with non-linear elements of the first class are more inclined to self-excitation than systems with elements of the second class. There are 4 figures and 2 Soviet references.

SUBMITTED: May 24, 1960

Card 2/2

88343

S/024/60/000/006/010/015  
E031/E413

16.9500 (1031, 1121, 1132)

AUTHORS: Kalinin, V.N. and Makar'yev, B.N. (Leningrad)

TITLE: The Investigation of Free Oscillations in Non-Linear Automatic Control Systems Using Logarithmic Frequency Characteristics

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, No.6, pp.157-161

TEXT: The elements of the system may be linear (L), non-linear (N) or complicated non-linear elements (K). The investigation is made considering the characteristics as two families of either the amplitude or the frequency for fixed values of the other parameter. Consider first auto-oscillations in a system formed by short-circuiting the K element. On the logarithmic scale, the transfer function splits into two parts and these two equations for the parameters of the auto-oscillations are solved graphically. The stability of the auto-oscillations is determined using the Nyquist criterion. The second case considered is that of a system of the form KL. Again a graphical approach is adopted. This case is of interest because it is equivalent to a system comprising a linear and a non-linear part. The third and last case is that of a

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VASIL'YEVA, Z.G.; GRANOVSKAYA, A.A.; MAKARYCHEVA, Ye.P.; TAPEROVA,  
A.A.; FRIDENBERG, Ye.E.; DANILEVICH, T.A., red.

[Laboratory work in general chemistry; semimicroanalysis]  
Laboratornyi praktikum po obshchei khimii; polumikrometod.  
2. izd. Moskva, Khimiia, 1965. 346 p. (MIRA 18:7)

RAYNIN, V.Ye., inzh.; MAKARYCHEVA, Ye.A., inzh.

Determining the permeability of soils to water by the method of large rings under field conditions. Gidr. i mel. 17 no.1:34-38 Ja '65. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii imeni A.N.Kostyskova.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

FEDOROV, A.K.; MAKARYCHEVA, V.V.

Reaction of the strawberry to low temperature and the length of  
day. Trudy Inst. gen. no. 311400-404 1974. (Sov. 1974)

BLUVSHEYN, M.N.; BORICHEVA, V.N.; Prinimali uchastiye: MAKARYCHEVA,  
S.I.; GREBENNIKOVA, Z.Ye.

Elastic and thermal properties of magnesite-chrome brick used  
in the dome of an open-hearth furnace and artificially im-  
pregnated with iron oxide. Ogneypory, 26 no.8:373-379 '61.  
(MIRA 14:9)

1. Vsesoyuznyy institut ogneuporov.  
(Magnesite) (Firebrick) (Open-hearth furnaces)

MAKARYCHEVA, S.I.

BLUVSHTEYN, M.N., kand.tekhn.nauk; MAKARYCHEVA, S.I., inzh.

Effect of thermal stability of steel-teeming stoppers on their  
durability. Biul.TSNIICM no.17:13-21 (325) '57. (MIRA 11:4)  
(Smelting)



GONCHAROV, V.V.; MAKARYCHEVA, S.I.

Evaluation of fired magnesite during hydration. Ogneupory 17, 458-65 '52.  
(CA 47 no.21:11684 '53) (MLRA 5:10)

1. Leningrad Inst. Refractories.

KLEYNBEG, A.T.; MAKARYCHEVA, S.I.; GONCHAROV, V.Y.

Chemical-mineralogical composition and moisture-resistance of fusions of  
Nikitovsk dolomite. Ogneupory 17, 221-8 '52.  
(CA 47 no:21:11690 '53)

1. Leningrad Inst. Refractories.

MAKARYCHEVA, S. I.

PA 244T71

USSR/Engineering - Refractories, Testing Oct 52

"Evaluation of the Activity of Industrial Burned Magnesite During Hydration," V. V. Goncharov, S. I. Makarycheva, Leningrad Inst of Refractories

"Ogneupory" No 10, pp 458-465

Assuming that adaptability of moistened magnesite mass for pressing refractory bricks depends chiefly on activity of magnesite in hydration, suggests evaluation of hydration activity by method based on measuring expansion of pressed specimens of magnesite during hydration under strictly prescribed

244T71

conditions established experimentally. Equipment is described and results are analyzed.

244T71

MAKARYCHEVA, R. I., Cand. Medic. Sci. (diss) "Change of Skeleton under Influence of Radioactive Substances and Dynamics of Development of Bony Tumors in X-ray Image," Moscow, 1961, 15 pp. (State Sci. Res. X-ray Inst. Min of Health RSFSR) 250 copies (KL Supp 12-61, 286).

LITVINOV, N.N., MAKARYCHEVA, R.I.

X-ray morphological study of the development of bone sarcoma in animals poisoned with radioactive strontium [with summary in English]. Vest.rent. i rad. 33 no.5:36-44 S-O '58 (MIRA 11:11)

L. Nauchnyy rukovoditel' raboty - chlen-korrespondent AMN SSSR  
prof. N.A. Krayevskiy.

(BONES AND BONES, neoplasms.

sarcoma induced by radiostrontium in rats (Rus))

(SARCOME, exper.

bone, induction by radiostrontium in rats (Rus))

(STRONTIUM, radioactive

induction of bone sarcoma in rats (Rus))

On the Theory of Semiconductors With an Excited  
Impurity Zone.

57-2-13/32

ASSOCIATION: Institute of Semiconductors AS USSR, Leningrad (Institut poluprovodnikov AN SSSR, Leningrad).

SUBMITTED: October 5, 1956.

AVAILABLE: Library of Congress.

1. Semiconductors-Excitation 2. Crystals-Impurities

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On the Theory of Semiconductors With an Excited Impurity Zone.

57-2-13/32

The quantity  $\mu(T)$  was here graphically determined for the following 5 cases:

I.  $\Delta_1 \epsilon = 0,002 \text{ eV.}$

II.  $\Delta_1 \epsilon = 0,$

III.  $\Delta_1 \epsilon = -0,002 \text{ eV, } \Delta_2 \epsilon = 0,005 \text{ eV, } \Delta = 0,0025 \text{ eV, } \gamma = 0,005 \text{ eV,}$   
 $\beta = 0,015 \text{ eV.}$

IV.  $\Delta_1 \epsilon = 0,005 \text{ eV.}$

V.  $\Delta_1 \epsilon = -0,01 \text{ eV.}$

$\Delta_2 \epsilon = 0,06 \text{ eV, } \Delta = 0,008 \text{ eV, } \beta = 0,02 \text{ eV, } \gamma = 0,01 \text{ eV.}$

$D_1 = 6\Delta, D_2 = 4\beta + 2\gamma.$

The negative  $\Delta_1 \epsilon$  signify that the ground- and the excited impurity-zone overlap.

Professor A. G. Samoylovich showed interest in this work.

There are 4 figures, and 3 references, 2 of which are Slavic.

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On the Theory of Semiconductors With an Excited  
Impurity Zone.

57-2-13/32

zone represent traps for the electrons. 2.) The concentration of the current-carriers in the p-zones first increases with an increase in  $T$  and then decreases. 3.) In all cases applies  $R(T) < 0$  and  $R_{1s} < 0$ ,  $R_{ip} < 0$ ,  $R_{3n} < 0$ . In the case of small  $\Delta_2 \xi$  (case I, II, III)  $|R(T)|$  slowly increases with an increase in  $T$ , as far as the electrons of the conductivity-zone play an important part in the case of small  $\Delta_2 \xi$ . But in the case of higher  $\Delta_2 \xi$  (case IV and V) the course with temperature of  $|R(T)|$  becomes more complicated:  $|R(T)|$  represents a curve with a number of maxima and minima which is apparently to be explained by the complicated interaction of the electron-concentrations in the ls- and p-zones, as well as by the fact that in the case of high  $\Delta_2 \xi$  in the conductivity-zone, even at  $T = 400^\circ\text{C}$  (as shown by the calculation), few electrons occur and the p-zones are effective electron-traps. As far as  $\alpha(T)$  is concerned it depends, like in references 2 and 3, on  $T$ , mainly as  $\bar{\mu}(T)$ .

$$\alpha \approx \frac{k\pi}{e} \bar{\mu}$$

Card 2/4



AUTHORS: Klinger, M. I., Makarycheva, G. A. 57-2-13/32

TITLE: On the Theory of Semiconductors With an Excited Impurity Zone (K teorii poluprovodnikov s vozbuzhdennoy primessnoy zonoj).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 2, pp. 264-266 (USSR).

ABSTRACT: This is a letter to the editor. The investigation is based on the results of reference 1. Only the excited impurity-p-zones are taken into account here. It is examined which part they play in the electric conductivity  $\sigma$ , in the Hall effect and in the thermo-electromotive force  $\alpha$ . The law of dispersion in the ground-impurity-ls-zone and in the excited p-zones is the same as in references 2 and 3, the designations also all remain the same as in references 2 and 3. It is shown that in all cases the following tendency prevails: on approach of the ground of the p-zones to the center of the ls-zone the level  $\mu(T)$  at identical T decreases. In the calculation of  $G(T)$  and  $R(T)$  with the aid of known  $\mu(T)$  the following results were obtained. 1.) With a rise in T,  $\sigma(T)$  in the total interval T decreases just like in the absence of the excited impurity-zones. When these zones are taken into account the decrease takes place slower: the excited zones which are somewhat wider than the ground

Card 1/1

MAKARYCHEV, Yuriy Nikoleyevich; KAPUSTINA, V.S., red.

[System for the study of elementary functions in the higher grades of secondary schools; methodological textbook for teachers] Sistema izucheniia elementarnykh funktsii v starshikh klassakh srednei shkoly; uchebno-metodicheskoe posobie dlia uchitelei. Moskva, Prosveshchenie, 1964. 218 p. (MIRA 17:11)

An instrument for recording ...

S/146/61/004/003/008/013  
D217/D301

sec. 9. Power supply d.c. mains 27 V and a.c. mains 127-220 V. 10. Dimensions of the instrument 630 x 420 x 350 mm. 11. Weight without the power supplies does not exceed 20 kg. There are 6 figures and 1 Soviet-bloc reference.

ASSOCIATION: Issledovatel'skiy, fiziko-tekhnicheskiy institut Gor'-kovskogo gosudarstvennogo universiteta im. N.I. Lobachevskogo Rekomendivana GIFTL (Physics and Technology Research Institute of the Gor'kiy State University im. L.I. Lobachevskiy. Recommended by GIFTL)

SUBMITTED: December 14, 1960

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28959

S/146/61/004/000/008/013  
D217/D301

An instrument for recording ...

ЭН-53 (EUP-53) are used. The zero-set level with input signal equal to zero is obtained by changing the voltage of one of the output valves. The instrument is moduli-built and consists of the following main blocs: 1) Gyroscopic angle pick-up; 2) Gyroscopic velocity pick-up; 3) Amplifiers; 4) Spooling mechanism and time marker; 5) Power supplies. The basic technical specification of the instrument is as follows: 1. Range of frequencies reproduced without distortion for roll and trim 0 to 1.2 c/s; 2. Maximum angles: roll  $\pm 40^\circ$ ; trim  $\pm 12^\circ$  (when using DK-6M as sensing elements both angles go up to  $\pm 60^\circ$ ). 3. Maximum stylus deflection; 60 mm for roll and 40 mm for trim. 4. Accuracy of recording on paper tape 1%. 5. Range of measurements of angular velocities, roll, ships 0-40 deg/sec, models 0-200 deg/sec, trim, ships 0-20 deg/sec, models 0-100 deg/sec. 6. The range of measurements of angular accelerations, roll, ships 0-40 deg/sec<sup>2</sup>, models 0-8000 deg/sec<sup>2</sup>, trim, ships 0-40 deg/sec<sup>2</sup>, models 0-800 deg/sec<sup>2</sup>. 7. Time marker intervals on paper tape 0.5 sec. 1 sec. 2 sec. with accuracy 1%. 8. Speed of feed of paper tape at recording: 2 mm/sec, 4 mm/sec, 8 mm/sec.

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An instrument for recording ...

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S/146/61/004/003/008/013  
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applied to the amplifier. The output of the amplifier feeds the control winding  $n_c$  of a two phase asynchronous motor type ЭМ-1 (EM-1). The output stages is built around tubes types 6П1П (6P1P) with anodes fed in antiphase from a transformer, whose center tap is connected through the  $n_y$  winding of the servo to the cathodes, so that a pulsating current is produced at the anode load, at a frequency double that of the supply (400 c/s). The grid winding  $n_c$  of the servo EM-1 connected directly to the supply 115V at 400 c/s through a phase shifting capacitor  $c_3$ . The a.c. component of the pulsating current makes the rotor of the servo oscillate at the frequency of the 1st harmonic and the amplitude of oscillations depends on the relationship between the electromechanical constant of the servo and the period of the 1st harmonic of pulsating current. Thus oscillations result in the linearization of the system with coulomb friction and backlash in gear and pinion drives. To obtain signals proportional to the angular velocity of the ship roll or of the roll of ship models, two stage gyroscopes type

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S/146/61/004/003/008/013  
D217/D301

13,2530  
AUTHORS: Korolev, V.I., Makarychev, Yu.K., Mel'nikov, V.A.,  
and Permyakov, N.V.

TITLE: An instrument for recording the angles of roll and  
pitch angular velocities and accelerations

PERIODICAL: Izvestiya vysshnikh uchebnykh zavedeniy. Priboro-  
stroyeniye, v. 4, no. 3, 1961, 75 - 82

TEXT: The author describe an instrument used for registering both  
the roll and trim of ship angles. The system consists of a gryo-  
scopic element producing the input coordinate angle  $\varphi(t)$  connected  
to series-connected summing device, amplifier, servomotor, slylus  
carriage with the position feedback loop between the slylus carria-  
ge and adder. The sensing element is the vertical reference gyro  
АГН-1 (AGI-1) or АК-6М (DK-6M). Linear wire pickups fixed at the  
axes of the gimbals serve as transducers. The voltage from the  
pick-ups is added to the feedback signal and the signal error is

Card 1/4

IV MAKARYCHEV, V.V.

MYAGKOV, K.N., inzhener; MOSKVIN, G.V., inzhener; BRUKOV, A.T., inzhener;  
POCHTAREV, F.K., inzhener; PESHKOV, M.F., inzhener; KRYSHDEVICH, V.A.,  
inzhener; MAKARYCHEV, V.V., kandidat tekhnicheskikh nauk; KUDRYASHOV,  
P.T., kandidat tekhnicheskikh nauk; KRIVITSKIY, M.Ya., kandidat  
tekhnicheskikh nauk; MATSELINSKIY, R.N., kandidat tekhnicheskikh  
nauk TESLER, P.A., kandidat tekhnicheskikh nauk

Large reinforced foam concrete panels for heated beamless floors  
of industrial buildings developed by the Central Scientific Re-  
search Institute of Construction and the Northern Urals Heavy  
Construction Trust. Rats. i izobr. predl. v stroi. no.81:18-19  
'54. (MIRA 8:6)

1. Glavuralpromstroy (for Myagkov, Moskvina, Brukov) 2. Sevural-  
tyazhtroy (for Pochtarev, Peshkov, Kryshdevich) 3. Tsentral'nyy  
nauchno-issledovatel'skiy institut promyshlennykh sooruzheniy  
(for Makarychev, Kudryashov, Krivitskiy, Matselinskiy, Tesler)  
(Floors, Concrete)

MAKARYCHEV, V.V.

NIKITIN, N.V., inzhener; PETROVA, T.G., arkhitektor; SHISHKIN, R.G.,  
inzhener; MAKARYCHEV, V.V., kandidat tekhnicheskikh nauk;  
MATSELINSKIY, E.N., Kandidat tekhnicheskikh nauk

Reinforced concrete ribbed panels for beamless floors of industrial buildings developed by the State Planning Institute of Industrial Construction and the Central Scientific Research Institute of Industrial Construction. Rats. 1 izobr. predl. v stroi. no. 81:8-10 '54. (MLRA 8:6)

1. Promstroyproyekt (for Nikitin, Petrova, Shishkin) 2.  
TSentral'nyy nauchno-issledovatel'skiy institut promyshlenn-  
nykh sooruzhenii (for Makarychev, Matselinskiy).  
(Floors, Concrete)



1. MAKARYCHEV, V. V. : MATSELINSKIY. R. N.
2. USSR (600)
4. Building
7. Large-panel construction of walls and roofs for unheated industrial buildings.  
Stroi. prom. 30 no. 12, 1952.
9. Monthly List of Russian Accessions, Library of Congress, **March** 1953. Unclassified.

SOV/129-59-6-1/15

On the Correspondence of the Kinetics of Decomposition of Residual  
and Supercooled Austenite in Alloy Steels

identical tempering regime may lead to different results if the heating is effected at differing speeds. Whilst in the case of slow heating the transformation is fully terminated during the process of holding at a certain temperature, during rapid heating the transformation may also proceed during the cooling. In view of the fact that for a wide range of steels the character of the kinetics of transformation of residual and supercooled austenite is similar (provided the isothermal nature of the process is conserved), there is a possibility of evolving a unified theory of the processes involved. There are 5 figures, 2 tables and 11 references, 10 of which are Soviet and 1 English.

ASSOCIATION: Gor'kovskiy issledovatel'skiy fiziko-tekhnicheskii  
institut (Gor'kiy Physico-technical Research Institute)

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SOV/129-59-6-1/15

On the Correspondence of the Kinetics of Decomposition of Residual and Supercooled Austenite in Alloy Steels

allows the conclusion that the complicated shape of the transformation diagram of residual austenite was observed, in all the investigated steels, for contents of the alloying element which were considerably higher than in the case of supercooled austenite. This may be due to the fact that for the given volume of the specimen it was not possible to achieve isothermal conditions of tempering. In the case of specimens of smaller volumes, better correspondence can be anticipated between the individual diagrams. The zones of stability of residual and supercooled austenite were either the same for all the investigated steels, or the zone of stability of residual austenite was at lower temperatures. The diagrams of decomposition of residual austenite are particularly important when working out regimes of tempering of high alloy case-hardened steels, and also when working out tempering regimes in molten salts or metals. The results obtained by the authors of this paper indicate that the speed of heating during tempering may in some cases be of considerable importance. An

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SOV/129-59-6-1/15

On the Correspondence of the Kinetics of Decomposition of Residual  
and Supercooled Austenite in Alloy Steels

all the tested steels; liquid tin served as the isothermal medium. The results confirm that Mo, W and V, have little influence on the stability of residual austenite for a wide range of concentration of these alloying elements (up to 18% W, up to 4% V, up to 2% Mo). No increase in the stability of the austenite was observed in chromium steels with up to 4% Cr. Diagrams of transformation of the residual and supercooled austenite for several of the tested steels are reproduced in Figs 1 - 5. It was found that the kinetics of transformation of the residual austenite and the influence of alloying elements on this process depend on the tempering conditions. For a number of steels the alloying elements did not have any considerable influence on the stability of the austenite in the case of slow heating. High heating speeds bring about a rapid change in the kinetics of decomposition of the residual austenite and it becomes comparable in character with the kinetics of isothermal transformation of supercooled austenite. Comparison of the decomposition diagrams

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SOV/129-59-6-1/15

On the Correspondence of the Kinetics of Decomposition of Residual  
and Supercooled Austenite in Alloy Steels

at the tempering temperatures 300 to 650 °C, in steps of 50°C, with holding times at each temperature of 60 minutes in molten tin. The investigations were carried out magnetically by means of a MAG 51 instrument which enabled following phase changes in the specimen from the instant of charging it into the bath up to the end of holding it at the given temperature, and also during subsequent cooling. For each tempering temperature a decomposition isotherm was recorded in coordinates of instrument readings ( $\alpha$ ) versus time ( $\tau$ ). For each temperature the time of heating the specimen through to the bath temperature, i.e. the non-isothermal range of the process, was evaluated from the time taken from the instant of charging the annealed specimen into the bath up to the instant of termination of changes in the magnetization values. For bath temperatures between 300 and 650 °C the heating time varied between 5 and 12 seconds. The decomposition of supercooled austenite was studied in the temperature range 300 to 700 °C, whereby the heating temperature for quenching was 1100 °C for

Card2/5

SOV/129-59-6-1/15

**AUTHORS:** Apayev, B.A. (Cand.Phys.Mat. Sciences),  
Krasotskaya, S.N. and Makarychev, V.N. (Engineers)

**TITLE:** On the Correspondence of the Kinetics of Decomposition of  
Residual and Supercooled Austenite in Alloy Steels (O  
sootvetstviu kinetiki raspada ostatocnogo i pereokhlazh-  
dennogo austenita v legirovannykh stalyakh)

**PERIODICAL:** Metallovedeniye i termicheskaya obrabotka metallov,  
1959, Nr 6, pp 2-6 (USSR)

**ABSTRACT:** The aim of the work described in this paper was to obtain  
comparative data on the kinetics of decomposition of  
residual and supercooled austenite, and also to elucidate  
the influence of the speed of heating on the decomposition  
of residual austenite during tempering for a large number  
of alloy steels (Refs 1-6). The investigations were  
carried out on tungsten, vanadium, chromium and molybdenum  
steels, for which the contents of carbon and of alloying  
elements and also of the residual austenite, are entered  
in Table 1, page 2. After preliminary homogenization  
annealing at 1200 °C for 6 hours, specimens of 4 mm dia  
and 40 mm length were quenched in oil. The process of  
isothermal decomposition of residual austenite was studied

Card1/5

L 39684-66  
ACC NR: AP6009504

ventricle fibrillation was caused in the dogs by a 3-sec application of 127 v 50 cps power through needle electrodes. Defibrillation was attempted by using an impulse or a-c voltage applied to disk electrodes pressed against the animal's (shaven) breast in the region of its heart. A total of 68 a-c tests and 110 impulse defibrillation tests was carried out. It was found that: (1) Minimum defibrillation impulse current remains fairly constant during successive tests on the same dog; the a-c defibrillation threshold is not so constant but is fairly close to the corresponding impulse-current value; (2) The equal values of impulse and a-c (0.04-0.06 sec) currents indicate the same mechanism of defibrillation in both cases; hence, one cycle of ac (0.02 sec) is recognized as sufficient for resuscitation purposes. Orig. art. has: 3 figures.

SUB CODE: 06, 09 / SUBM DATE: 11Jun65 / ORIG REF: 003 / OTH REF: 003

Card 2/2

BFB

L 39684-66 GD-2

ACC NR: AP6009504 (A) SOURCE CODE: UR/0105/66/000/003/0038/0040

AUTHOR: Gurvich, N. L. (Doctor of medical sciences); Nikerbokker, G. <sup>7</sup>  
Makarychev, V. A. <sup>B</sup>

ORG: Laboratory of Experimental Physiology on Organism Resuscitation,  
AMN SSSR [ N. L. Gurvich, V. A. Makarychev ] (Laboratoriya eksperimental'noy  
fiziologii po ozhivleniyu organizma AMN SSSR); Physical Laboratory, Surgery  
Clinics, Johns Hopkins University, Baltimore, Md., USA\* [ Hugh Nickerboker ]

TITLE: Efficiencies of a single electric impulse and ac used for defibrillation of  
the heart after an electric shock <sup>22</sup>

SOURCE: Elektrichestvo, no. 3, 1966, 38-40

TOPIC TAGS: heart defibrillation, resuscitation

ABSTRACT: The results are reported of an experimental investigation of dog-  
heart defibrillation by single electric impulses and by more prolonged 50-cps a-c  
trains. Seventeen dogs weighing from 6 to 15,5 kg were used as test animals;

Card 1/2

UDC: 537:61



MAKARYCHEV, V.A.

Movable radiant-heating furnace. Mashinostroitel' no. 1:25  
Ja '66 (MIRA 19:1)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

MAKARYCHEV, V.A., inzh.; BERMAN, I.S., inzh.

Relayless signaling system using an asymmetric trigger. Energetik  
12 no.3:23-24 Mr '64. (MIRA 17:4)

MAKARYCHEV, V., student chetvertogo kursa

"2TVS" television viewer. Tekh.mol. 28 no.7:14 '60.  
(MIRA 13:8)

1. Moskovskiy radiomekhanicheskiy tekhnikum.  
(Motion-picture studios--Equipment and supplies)

MAKARYCHEV, T. I.

MAKARYCHEV, T. I.: "Problems of three-dimensional plan solution in designing and building modern dairy farms for sovkhozes and kolkhozes in the USSR." Moscow Architectural Inst. Chair of Architectural Planning of Residential Structures. Moscow, 1956.  
(Dissertation for the Degree of Candidate in Architectural Science.)

So: Knizhnaya letopis', No. 37, 1956. Moscow.

1. GONCHAROV, V. V., MAKARYCHEV, S. I.
2. USSR (600)
4. Magnesite
7. Estimating the reactivity of industrial burnt magnesite in hydration. Ogneupory 17 no. 10, '52.
9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

SYVOROTKIN, G.S., st. nauchn. sotr.; ZAYTSEVA, K.I., st. nauchn. sotr. Prinimal uchastiye MAKARYCHEV, N.T., kand. sel'khoz. nauk; CHERNYSHEV, V.I., red.

[Instruction for the improvement of deep and medium steppe Solonetz soils in growing shelterbelts along railroads]  
Nastavlenie po melioratsii glubokikh i srednikh stepnykh solontsov dlia vyrashchivaniia zashchitnykh lesonasazhdenii vdol' zheleznnykh dorog. Moskva, Transport, 1965. 111 p.  
(MIRA 18:4)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye puti i sooruzheniy. 2. Laboratoriya zashchitnykh lesonasazhdeniy Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Syvorotkin, Zaytseva). 3. Rukovoditel' laboratorii zashchitnykh lesonasazhdeniy Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Makarychev).

MAKARYCHEV, N.T., kand. sel'skokhoz. nauk

More about the type of tree shelterbelts. Put' i put. Khiz. S no.10:  
34-37 '64. (NIRA 17:12)

1. Rukovoditel' laboratorii zashchitnykh lesnasazhdeniy 'sesoyuznogo  
nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta  
Ministerstva putey soobshcheniya.

MAKARYCHEV, N.T.

It is necessary to modify the arrangement of protective tree belts. Put' i put.khoz. 6 no.11:41-43 '62. (MIRA 16:1)

1. Rukovoditel' laboratorii zashchitnykh lesonasazhdeniy Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.  
(Windbreaks, shelterbelts, etc.)



MAKARYCHEV, N.T., kand.sel'skokhoz.nauk

Width of the spacing between the rows of protective plantings.  
Put'i put.khoz. 5 no.7:34-35 J1 '61. (MIRA 14:8)

1. Rukovoditel' laboratorii zashchitnykh lesonasazhdeniy  
Vsesoyuznogo nauchno-issledovatel'skogo instituta  
zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.  
(Windbreaks, shelterbelts, etc.)  
(Tree planting)

MAKARYCHEV, N.T.

Selection tree and shrub species for forest plantations and  
their cultivation on eroded and stony soils of the Volga Upland.  
Trudy Inst. lesa 44:71-102 '59. (MIRA 12:9)  
(Volga Hills---Afforestation) (Soil conservation)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

MAKARYCHEV, N.T.

Establishing oak plantations on steep slopes of the central  
forest-stops. Trudy Inst. lesa 40:95-142 '59. (MIRA 12:10)  
(Oak)

D'YACHENKO, A.Ye.; MAKARYCHEV, N.T.; KOLDANOV, V.Ya., kand.sel'sko-khoz.nauk, otv.red.; KORNEYEVA, K.I., red.izd-vs; BRUZGULS, V.V., tekhn.red.

[Deflation of soils and land improvement through afforestation in North Kazakhstan] Defliatsiia pochv i agrolesomeliorativnye meropriiatiia v Severnom Kazakhstane. Moskva, Izd-vo Akad.nauk SSSR, 1959. 108 p. (MIRA 13:1)

(North Kazakhstan Province--Wind erosion)  
(North Kazakhstan Province--Afforestation)

MAKARYCHEV, N. T.

"The Agrotechnics of Raising Oak Plantings on Steep Slopes Under Conditions Prevailing on the Central Forest Steppe." Cand Agr Sci, Inst of Forestry, Acad Sci USSR (VM, 10 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: Sum. No. 556, 24 Jun 55

MAKARYCHEV, N.T.

Acorns

Summer and autumn sowing of acorns. Les. i step' 4, no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952 ~~1953~~, Uncl.

CHERNOV, M.I., inzh.; MAKARYCHEV, M.A., inzh.

Raise the level of fleet technical operation. Rech.transp. 18  
no.6:23-24 Je '59. (MIRA 12:9)

(Ships--Maintenance and repair)

MAKARYCHEV, M.A.

ALFER'YEV, Aleksandr Yakovlevlevich; RYENSKIY, N.M., redaktor; MAKARYCHEV,  
M.A., retsenzent; PLAKHOV, V.S., retsenzent; KALININ, B.A., retsen-  
~~zent~~; KAN, P.M., redaktor; BEGICHEVA, M.N., tekhnicheskij redaktor

[Longer periods between ship repairs] Za uvelichenie mezhremont-  
nogo perioda raboty sudov. Moskva, Izd-vo "Rechnoi transport"  
1955. 43 p. (MIRA 9:3)

(Ships--Maintenance and repairs)



KASHINTSEV, V.A.; MAKARYCHEV, G.S.; NIKIFOROV, M.N.

Experience in processing low-grade cotton. Tekst. prom. 18 no.6:  
18-46 Je '58. (MIRA 11:7)

1. Glavnyy inzhener fabriki "Shuyskiy proletariy" (for Kashintsev).
  2. Zaveduyushchiy tkatskim proizvodstvom fabriki imeni S.I. Balashova (for Makarychev).
  3. Zaveduyushchiy otdelechnym proizvodstvom Shuyskoy ob'yedinennoy fabriki (for Nikiforov).
- (Cotton manufacture)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

MAKARYCHEV, G.I.

Pre-Cambrian and Caledonian granitoids in the central Tien Shan  
and their position in the structure. Baul. MOIP. Otd. geol.  
39 no.6:3-18 N-D '64. (MIRA 18:3)

MAKARYCHIN, G.I.; FAZILOVA, V.I.

Relationship between igneous activity and tectonics as revealed  
by studying a formation of the Karatau structure (southern  
Kazakhstan). Trudy GIN no.93:123-176 '63 (M RA 1736)

MAKARYCHEV, G.I.; PAZILOVA, V.I.

Igneous activity in the Late Pre-Cambrian and Paleozoic history  
of the Kara-Tau (southern Kazakhstan). *Biul.MOIP.Otd.geol.* 37  
no.5:164 S-O '62. (MIRA 15:12)  
(Kara-Tau--Geology,Structural)

NIKOLAYEV, N.I.; BELYAKOV, L.V.; MAKARYCHEV, G.I.; PAZILOVA, V.I.

Ancient rocks in the Kara-Tau (southern Kazakhstan). Trudy MGRI  
37:131-136 '61. (MIRA 15:1)

(Kara-Tau--Rocks)

MAKARYCHEV, G.I.

New data on the Ordovician stratigraphy of the Baydzhansay  
region in the Greater Kara-Tau (East Kazakhstan Province).  
Izv.vys.ucheb.zav.: geol. i razv. 2 no.9:20-24 S '59.  
(MIRA 13:4)

1. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze.  
(Baydzhansay region (Kara Tau)--Geology, Stratigraphic)

5-4-5/15

Stratigraphy of Proterozoic and Lower-Paleozoic Deposits of the Great Karatau

by A.V. Peyve (Ref. 16). The similarity found indicates the same paleogeographic conditions for the development of these regions. The character of sediments, their thicknesses, the volcanism and intrusive activity, permit to draw a conclusion as to geosynclinal development of the entire Karatau during the Proterozoic and Lower Paleozoic periods. The article contains 2 geologic maps, 2 profiles, and 18 Slavic references.

AVAILABLE: Library of Congress

Card 3/3

5-4-5/15

Stratigraphy of Proterozoic and Lower-Paleozoic Deposits of the Great Karatau

the Great Karatau are very thick. There is an interruption between them and considerable nonconformity in depth. The Proterozoic system is represented by both volcanic and sedimentary rocks which are greatly metamorphosed. This system is characterized by intensive dislocations and development of slaty cleavage. The Lower Paleozoic system is represented by weakly metamorphosed sedimentary rocks of Cambrian and Ordovician ages. The thickness of the system attains 5,000 m. Among the rocks of this system, terrigenous-clastic rocks are prevailing. Both of these systems are widespread in the north-western and south-eastern Karatau and in the Baydzhansay district where they build up the most lifted parts of large anticlinoria. The author gives then a detailed description of the stratigraphy of these systems subdividing them into stages and series, and characterizes each of them by paleontological and other means. He proceeds then to correlate this stratigraphy with that of the Little Karatau and finds considerable similarities between both of them. He adheres to the comparison of these two regions carried out

Card 2/3



MAKARYCHEV, G.I.

AUTHOR: Makarychev, G.I.

5-4-5/15

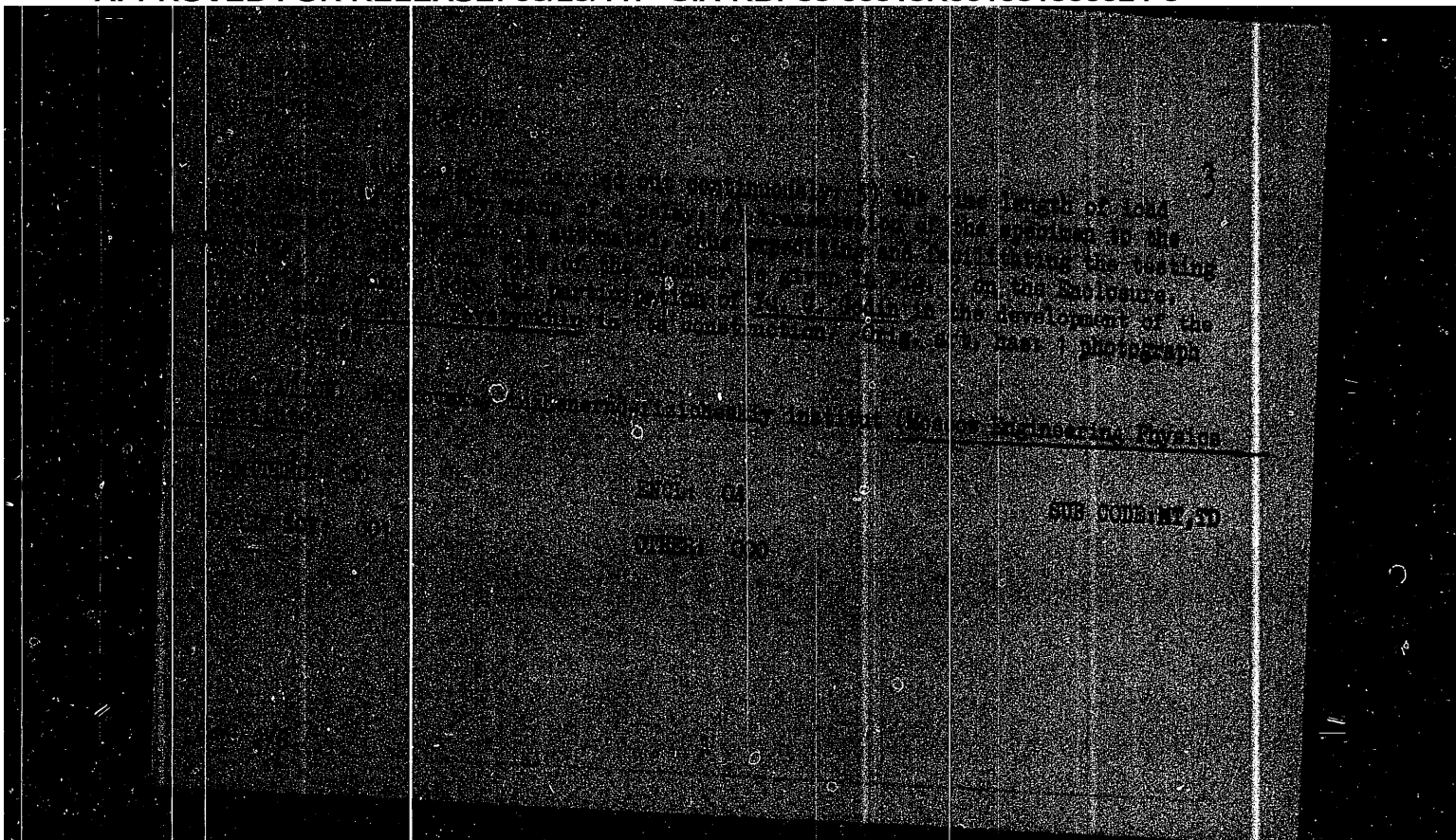
TITLE: Stratigraphy of Proterozoic and Lower-Paleozoic Deposits of the Great Karatau (Stratigrafiya proterozoyskikh i nizhnepaleozoyskikh otlozheniy Bol'shogo Karatau)

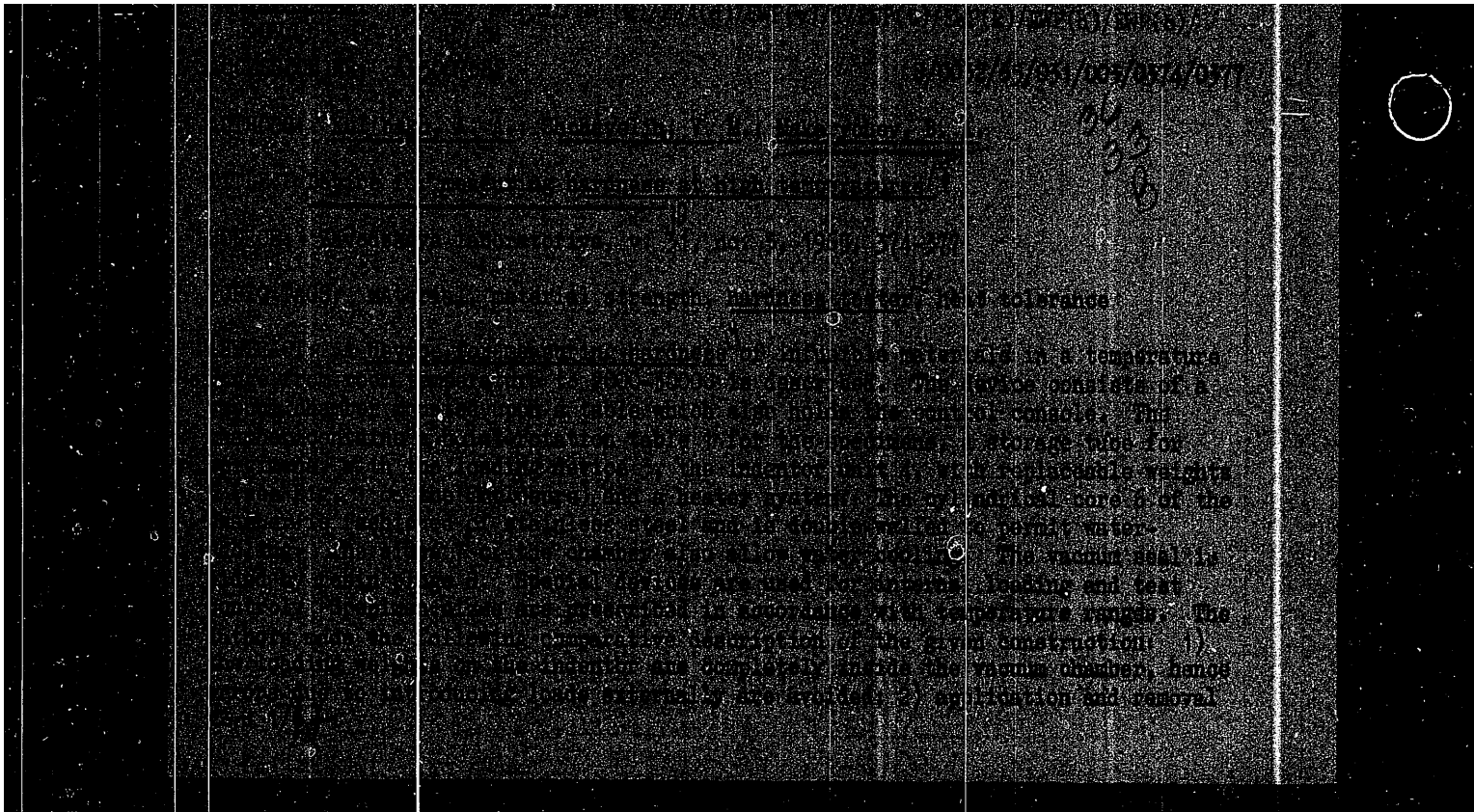
PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskii, 1957, No 4, pp 83-104 (USSR)

ABSTRACT: In 1940, a vanadium mineralization zone was discovered in the north-western part of the Great Karatau. This gave rise to the start of a large-scale survey throughout the Great Karatau region. The author began the study of Proterozoic and Lower-Paleozoic stratigraphy of that region in 1953. At first, survey-mapping work (employing a scale of 1:50,000) was carried out in the north-western Karatau by the South-Kazakhstan expedition of the scientific research section of the Moscow Geologic-Surveying Institute. During the years 1955 and 1956, the entire Great Karatau was subjected to thematic explorations, which were headed by N.I. Nikolayev. As a result, new data were collected which made it possible to reconsider anew the older stratigraphic scheme of the Proterozoic system and to characterize in more details the Lower Paleozoic system of rocks. These two rock systems in

Card 1/3

MAKARYCHEV, G. I., Cand Geol-Min Sci -- (diss) "Stratigraphy  
of <sup>ancient</sup> ~~early~~ strata of Bolshoy Karatau." Mos, 1957. 20 pp (Min  
of Higher Education USSR, Mos Geol-Prospecting Inst im S. Ord-  
zhonikidze), 110 copies (KL, 1-58, 116)





APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

29 no.118489-495 '64.

(MIRA 18:1)

1. Vostochnyy institut ogneuporov (for Ignatova, Flyagin, Popov, Chukreyeva). 2. Magnitogorskiy metallurgicheskiy kombinat (for Dikshteyn, Nazarov, Makarychev).

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

SELIVANOV, N.M.; TKACHENKO, I.A.; MAKARYCHEV, A.R.

Research at the Magnitogorsk Metallurgical Combine. Stal' 22  
no.8:718-719 Ag '62. (MIRA 15:7)  
(Magnitogorsk—Steel ingots)

YUSHIN, F.A.; MAKARYCHEV, A.B.

Research at the Magnitogorsk Metallurgical Combine. Stal'  
22 no.8:696 Ag '62. (MIRA 15:7)  
(Magnitogorsk—Blast furnaces)

8/11/69/000/012/003/015  
A034/A027

Optimum Working Conditions for the Refractory Furnaces

and frequency of heat changes during the non-heat-resistant period of the working zones in refractory bricks are the causes of their decomposition. The decomposition of refractory bricks is caused by the action of high-temperature gases. Greater results can be obtained by increasing the temperature of the furnace to 1,500°C. Refractory bricks with the present methods of charging high-capacity furnaces this can be obtained only by extending the charging time or by intensifying the combustion of fuel. When having to cool the roof under 1,450-1,500°C during charging, the number of reversals should preferably be reduced by intensifying combustion as much as possible, and by increasing the intervals between reversals. In order to prevent the decomposition of the refractory bricks, recurring for 7-9 minutes in the first phase of the decomposition of the roof, care should be taken to prevent any reducing medium from entering this area, not even for a short time. Refractory bricks deteriorate more quickly in the first phase of the furnace campaign than in the subsequent phase. This shows that decomposition takes place quickly when there are refractory bricks with a high content of iron oxides in the working area. There are 6 types of refractory bricks used in the USSR.

ASSOCIATION: Vostochny Institut (Eastern Institute of Refractory Material). Metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

Card 4/4



5/13/60/000/012/003/015  
A054/ADZ

AUTHORS: Bas'gas, I.P., Vyaznikova, T.A., Loksharov, V.D., Dikhteyn, Ye.  
I. S. Salyanov, I.A., Makarychev, A.R., and Mazurov, K.S.

TITLE: Optimum Working Conditions for Basic Roofs of Open-Hearth  
Furnaces

TRANSLATION: Sht., 1960, No. 12, pp. 1046-1053

TEXT: In order to investigate the factors influencing the useful life of magnesite-chromite bricks used for open-hearth furnace roofs tests were carried out in the Magnitogorsk Metallurgical Combine (1957-1959) with furnaces fired a) with masut only, (basalt type furnace); b) with blast-furnace gas, and in addition c) with masut and blast-furnace gas (basalt type furnace). The tests served to determine the temperature of the magnesite-chromite bricks at various distances from the working surface of the roof, the composition of the atmosphere under the roof, the quantity and composition of dust and the rate of the decomposition in bricks. For these purposes the following devices were employed: QM (PEP) type photoelectric pyrometer, platinum-rhodium and platinum thermocouples, mounted in a  $75 \times 75 \times$

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600 mm magnesite-chromite roof. The hot junctions of the thermocouples being at 0.3 m from the working surface, the cold junctions were placed in the roof. The thermocouples were placed immediately on the surface, it was protected by a silicon-rich cap, with a wall 0.8 mm thick; a single-point potentiometer with a disc scale rotating at 0.5 rpm for gas analysis PM (GEP-3) type and for random tests; 3TM-2 (VRI-2) type analyzers were used. The molting dust under the roof was collected by a water cooled detachable brass tube connected in series with water filters, gasometers and ejectors. For introducing the apparatus into the roof the roof was opened by means of a special device. The tests were carried out reasonably between the character of temperature change of the working roof surface and the duration of break in firing, the opening of the charging doors, the time during which cold materials are in the furnace, the duration of various processes and repairs were investigated for all three types of furnaces. It was found that the useful life of the roof in the first place depended on the kind of fuel used, on the place where fuel was fed in the furnace and on the method of charging. The most favorable conditions for the furnace roof were found under unfavorable atmospheric conditions: CO was frequently, carbohydrates were occasionally found in the roof zone. Even when

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part of the gas fuel was replaced by a liquid (max. 500-700 kg/hour) the useful life of the roof was shortened, mainly when charging masut or tar through tuyeres mounted at the external sides of the fuel tanks. Hydrocarbons are harmful because the ceramic surface of the bricks acts as a catalyst and promotes their decomposition during heating and thereby increases the erosion of the refractory bricks. When firing with partly liquid or all-liquid fuel the temperature conditions are also adversely affected because the velocity of temperature changes on the working surface increases during reversing (up to 1000°C/min), the temperature drop can attain 200°C and more in this interval. The cooling rate of the roof surface is also increased. When the temperature is cooling, the temperature drops to 1500°C and lower. When cooling below 1500°C the refractory bricks deteriorate considerably under the effect of temperature change, because the working zones of refractory material pass from a semi-plastic heat-resistant condition into a brittle, non-heat-resistant state. As, however, in some cases cooling even below 1000°C (for instance, during repair) does not increase deterioration of the bricks, it can be assumed that actually not cooling itself, but its accompanying phenomena, such as speed

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Behavior of Highly Aluminiferous Bricks in the  
Checkers of Martin Furnaces

SOV/131-59-1-6/12

of the melting dust is indicated in table 2, and its interaction with refractory products in table 3. Figure 3 shows the chemical composition of deposits on the bricks of the checkers of regenerators of a 400-ton open-hearth furnace. Table 4 gives the characteristics of deposits of melting dust on the aluminium silicate checker. Figure 4 shows that aluminous bricks in the checkers provide the best heat conditions for the open-hearth furnace, high performance and low costs (Table 5). Conclusions: the highly aluminiferous bricks with an  $Al_2O_3$  content of 45-55 % are described as the most efficient for the checkers of big furnaces; the chrome-aluminiferous bricks work efficiently only with a systematic washing of the checkers. A safe basis of raw materials should be found out for the manufacture of chrome-aluminiferous bricks. There are 4 figures, 5 tables, and 3 Soviet references.

ASSOCIATION:

Gisogneupor

Card 2/2

15(2)  
 AUTHOR: Makarychev, A. R. SOV/131-59-1-6/12

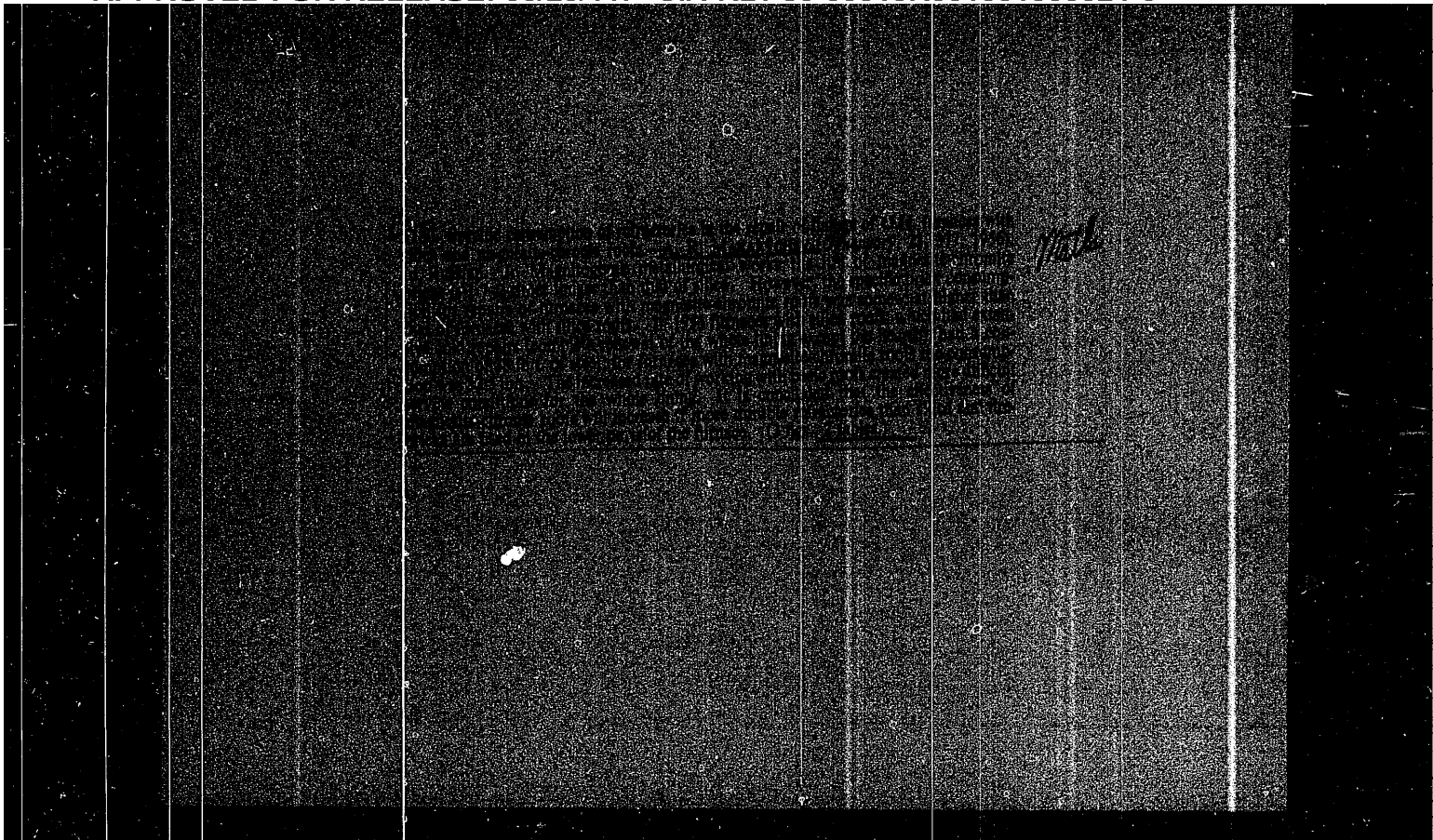
TITLE: Behavior of Highly Aluminiferous Bricks in the Checkers of Martin Furnaces (Sluzhba vysokoglinozemistogo kirpicha v nasadkakh marte.lovskikh pechey)

PERIODICAL: Ogneupory, 1959, Nr 1, pp 33 - 38 (USSR)

ABSTRACT: The chemical composition and properties of refractories, which have recently been used to wall up the upper rows of the checkers of Martin open-hearth furnaces, are shown in table 1. This is the result of a former work by the author (Ref 1) and of the report of the Gisogneupor (Ref 2). Figure 1 shows the state of a worked-off dinas brick in the checker of the regenerators of a 400-ton open-hearth furnace, figure 2 shows that of a chrome-aluminiferous one. The examination of the interaction between melting dust and various refractory products was made by Bron, and it showed that an increase of the alkali content and of silicon dioxides in the dust increases its aggressiveness with respect to refractory aluminium silicate products. Examinations were carried out according to the methods by Bas'yas. The chemical composition

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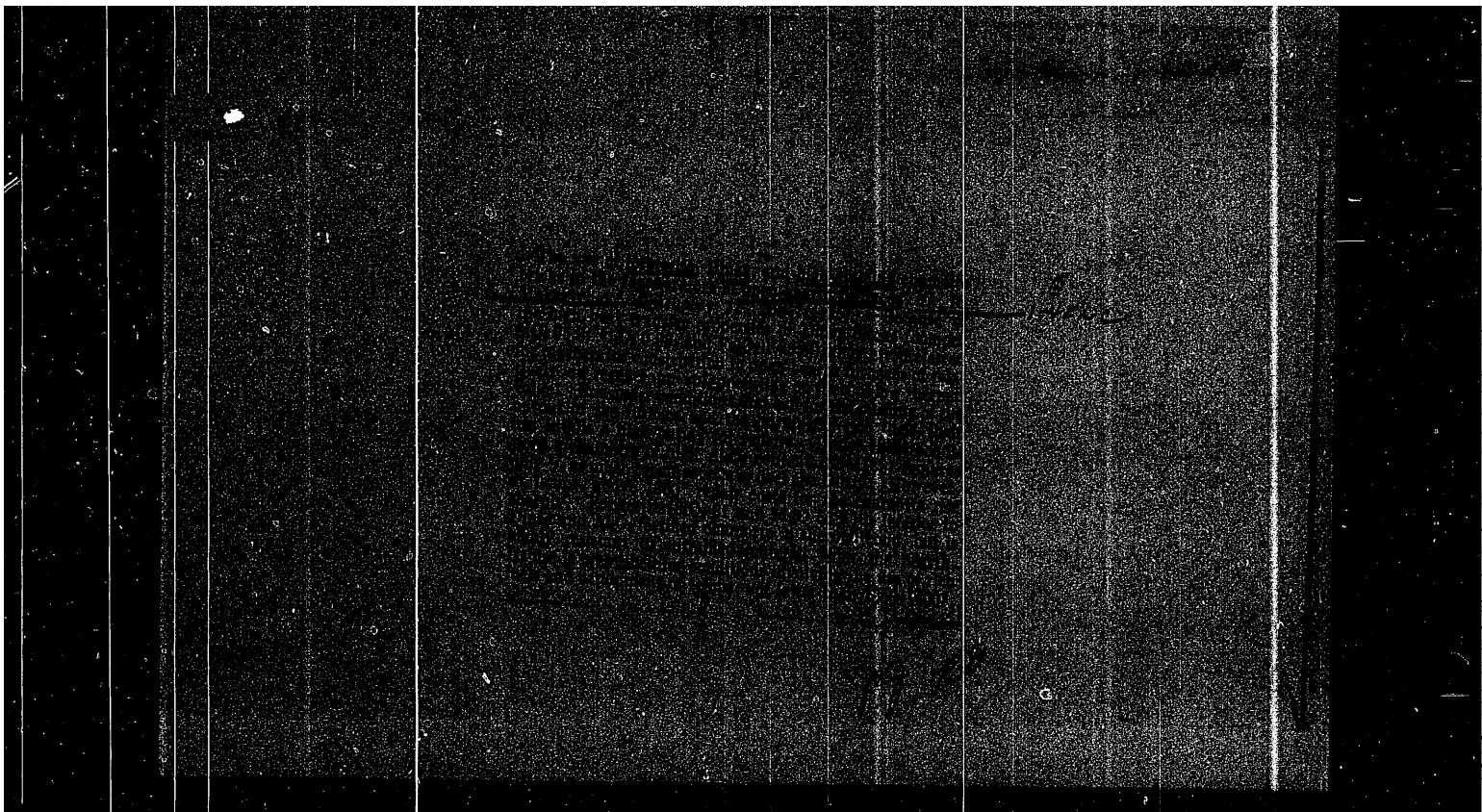
10

MAKARYCHIN, A.R.

Service of unfired magnesite nozzles. Ogneupory 22 no.9:415-417  
'57. (MIRA 10:11)

1. G1sogneupor.  
(Smelting furnaces--Equipment and supplies)  
(Magnesite--Testing)

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ILLEGIBLE



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1. Visognepor.  
(Open hearth furnaces--Repairing) (Firebrick)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500024-6

MAKARYCHEV, A.R., inzh.

Life of open-hearth furnace bottoms. Ogneupory 19 no.6:255-262  
'54. (MIRA 11:10)  
(Open-hearth furnaces) (Firebricks)

MAKARYCHEV, A.I. [deceased]; LEVITSKIY, L.M.; GOLUBEVA, L.Ya.;  
KOSHCHINA, L.F.

Cerebral cortex dynamics in patients with obesity during  
various stages of treatment. Vop. pit. 21 no.2:41-47 Mr-Apr '62.  
(MIRA 15:3)

1. Iz kliniki lechebnogo pitaniya (zav. - doktor meditsinskikh  
nauk L.M. Levitskiy) i laboratorii vysshey nervnoy deyatel'nosti  
(zav. - prof. A.I. Makarychev [deceased]) Instituta pitaniya  
AMN SSSR, Moskva.

(OBESITY)

(CEREBRAL CORTEX)

277  
ZHUKAUSKAS, A. A.; SHLAUCHYANUKAS, A. A.; MAKARYAVICHYUS, V. Yu.; AMERAZIYVICHYUS, A. B.

"Determination of interaction between velocity and temperature fields... in a boundary layer with variable viscosity."  
report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Inst of Power Engineering, AS LitSSR.

L 24404-66

ACC NR: AT6006922

which is obtained on the basis of general assumptions on the tangential stress and the heat flux in turbulent transfer

$$\tau = (\mu + \rho \epsilon_t) \frac{dw_x}{dy},$$

$$q = (\lambda + \rho c_p \epsilon_t) \frac{dt}{dy}.$$

Experiments were made to determine the distribution of the velocities and the temperatures in the boundary layer on a plate. The experiments were carried out under isothermal conditions, with heating and cooling water and of transformer oil, in a Reynolds number range from  $3 \times 10^5$  to  $6 \times 10^6$ . Curves are given showing the resulting deformation of the velocity field under heat transfer conditions, and the turbulent velocity profiles with heating of the liquid. A final curve shows the results of a calculation of the temperature profile in transformer oil, with and without taking into account the change in viscosity. By taking the change of viscosity into account good agreement is obtained between experimental and theoretical data. Orig. art. has: 2 formulas and 3 figures.

SUB CODE: 20/ SUBM DATE: 09Nov65/ OTH REF: 003

END 2/2 11/1

L 24404-66 EWT(1)/EWP(m)/EWT(m)/I/EWA(1) WW/DJ/GS

ACC NR: AT6006922

SOURCE CODE: UR/0000/65/000/000/0365/0368

AUTHOR: Zhukauskas, A. A.; Shlanichyauskas, A. A.; Makaryavichyus, V. I.;  
Ambrazyavichyus, A. B.ORG: Power and Electrotechnical Institute AN LitSSR (Institut  
energetiki i elektrotekhniki AN LitSSR)TITLE: Determination of the interaction of the velocity and temperature  
fields in a boundary layer with variable viscositySOURCE: Teplo- i massoperenos. t. II: Teplo- i massoperenos pri  
vzaimodeystvii tel s potokami zhidkostey i gazov (Heat and mass transfer.  
v. 2: Heat and mass transfer in the interaction of bodies with liquid  
and gas flows). Minsk, Nauka i tekhnika, 1965, 365-368TOPIC TAGS: boundary layer theory, fluid viscosity, turbulent heat  
transferABSTRACT: In the given case, the relationship between the temperature  
field and the velocities is expressed in the form of the integral:

$$\theta = \frac{q_{w, max}}{(t_f - t_w) \tau_w} \int_0^{\psi} \frac{Pr(1 + \epsilon_r/\nu) \frac{q/q_w}{\tau/\tau_w}}{c_p[1 + Pr\epsilon_r/\epsilon_r(\epsilon_r/\nu)]} d\psi$$

Card 1/2

MAKARYAVICHYUS, V.I. [Makarevicius, V.]; TAMONIS, M.M.

Effect of chemical reactions on diffusion-convective energy  
transfer. Trudy AN Lit. SSR. Ser. B. no. 4:153-164 '65  
(MIRA 19:2)

1. Institut energetiki i elektrotekhniki AN Litovskoy SSR.  
Submitted July 6, 1965.

MATYUKAS, A.A. [Matiukas, A.]; ZHYUGZHDA, I.I. [Ziugzda, J.]; MAKARYAVICHYUS, V.I. [Makarevicius, V.]; ZHUKAUSKAS, A.A. [Zukauskas, A.]

Using semiconductor thermistors for measuring viscous fluid flow speed. Trudy AN Lit. SSR Ser. B no.3:87-90 '63.

(MIRA 18:3)

1. Institut energetiki i elektrotehniki AN Litovskoy SSR.



ZHYUGZHA, I.I. [Ziugzda, J.]; MAKARYAVICHYUS, V.I. [Makarevicius, V.];  
SHLANCHYASKAS, A.A. [Slanciauskas, A.]; AMBRAZYAVICHYUS, A.B.  
[Ambrasevicius, A.]; EYDUKYAVICHYUS, P.I. [Eidukevicius, P.];  
ZHUKAUSKAS, A.A. [Zukauskas, A.]

Speed and temperature distribution in the turbulent boundary  
layer on a plate. Trudy AN Lit. SSR Ser. B no.3:99-105 '63.  
(MIRA 18:3)

1. Institut energetiki i elektrotehniki AN Litovskoy SSR.

MAKARYAVICHYUS, V.I. [Makarevicius, V.]; ZHYUGZHDA, I.I. [Ziugzda, J.];  
AMBRAZYAVICHYUS, A.B. [Ambrazevicius, A.]; EYDUKYAVICHYUS, P.I.  
[Eidukevicius, P.]; ZHUKAUSKAS, A.A. [Zukauskas, A.]

Speed distribution in the isothermal boundary layer on a plate.  
Trudy AN Lit. SSR Ser. B no.3:91-97 '63.

(MIRA 18:3)

1. Institut energetiki i elektrotehniki AN Litovskoy SSR.

MAKARYAVICHYUS, V.I. [Makarevicius, V.]; ZHUKAUSKAS, A.A. [Zakauskas, A.]

Determining the velocity profile of a flow at the narrowest cross section past a straight-line bank of tubes. Trudy AN Lit. SSR Ser. B no.4:137-144 '62.

Local heat transfer from straight-line banks of tubes in a predominantly laminar flow. Ibid.:145-156

(MIRA 18:3)

1. Institut energetiki i elektrotekhniki AN Litovskoy SSR.

MAKARYAVICHYUS, V.I. [Makarevicius, V.]; ZHUGZHD, I.I. [Zingzda, J.];  
ZHUKAUSKAS, A.A. [Zukauskas, A.]

Calculating the heat transfer from and to curved surfaces in the  
case of a laminar boundary layer. Trudy AN Lit. SSR Ser. 6 no.3:  
191-202 '62. (MIRA 18:3)

1. Institut energetiki i elektrotehniki AN Litovskoy SSR.

Investigation of local ...

S/236/62/000/004/007/009  
D234/D308

for the average heat loss of a cylindrical body forming part of a system. For values of  $Re_f$  between  $10^2$  and  $10^3$  they obtain

$$Nu_f = 0.52 Re_f^{0.5} Pr_f^{0.36} (Pr_f/Pr_w)^{0.25} \quad (20)$$

in the case of pipe sets in a transversal flow. There are 7 figures and 1 table.

ASSOCIATION: Institut energetiki i elektronika AN Litovskoy SSR.  
(Institute of Power and Electrical Technology AS Lithuanian SSR)

SUBMITTED: April 5, 1962

Card 2/2

S/236/62/000/004/007/009  
D234/D308

AUTHORS: Makaryavichyus, V. I. and Zhukauskas, A. A.

TITLE: Investigation of local heat loss of pipes in corridor sets in the case of predominantly laminar flow

SOURCE: Akademiya nauk Litovskoy SSR. Trudy. Seriya B. no. 4, 1962, 145-155

TEXT: Experiments were carried out at the authors' Institute with 13-row and 10-row pipe sets in a stream of transformer oil. The sets and the experimental installation were described previously. From data processing the authors obtain

$$\text{Nu}_f = 0.19 \left[ 0.875 \frac{L}{x_1} \int_0^{x_1} \chi(\sigma) \left( \frac{w' \tau}{v_f x} \right)^{0.5} dx + k \text{Re}_f^{0.5} \right] \text{Pr}_f^{0.36} \left[ \text{Pr}_f / \text{Pr}_w \right]^{0.25}$$

(19)

Card 1/2

Determination of the ...

S/236/62/000/004/006/009  
D234/D308

channel,  $w_{av}$  the average velocity,  $Re_{s/2}$  Reynolds' number referred to  $s/2$  and to  $w_{av}$ . Experiments at the authors' Institute, on a 13-row set of pipes, in a stream of transformer oil, using thermoresistances as transmitters, confirmed the theory. It is concluded that with increasing  $b$  the ratio  $w_{max}/w_{av}$  decreases. The graph of the curvature coefficient can be used in practical design in the case of predominantly laminar flow. There are 5 figures.

ASSOCIATION: Institut energetiki i elektronika AN Litovskoy SSR  
(Institute of Power and Electrical Technology AS  
Lithuanian SSR)

SUBMITTED: March 6, 1962

Card 2/2

S/236/62/000/004/006/009  
D234/D308

**AUTHORS:** Makaryavichyus, V. I. and Zhukauskas, A. A.

**TITLE:** Determination of the velocity profile of a stream in the smallest section of passage in flow through a corridor set of pipes

**SOURCE:** Akademiya nauk Litovskoy SSR. Trudy. Seriya B. no. 4, 1962, 137-144

**TEXT:** Using theoretical expressions for velocity distribution in a channel and the theory of associated flow behind a poorly streamlined body, the authors construct graphs of the excess velocity coefficient (the ratio  $(w_{s/2} - w_{av})/w_{av}$ ) against the dimensionless distance  $(2x/s)/Re_{s/2}$  and of the curvature coefficient of the velocity profile against the parameter  $Z = b^2/a^2(a-1)^2$ ,  $a$  and  $b$  being the relative transversal and longitudinal spacing of the pipes,  $s$  the transversal gap = minimum distance between pipes in a row,  $w_{s/2}$  the local velocity on the geometrical axis of the

Card 1/2



Calculation of heat loss ...  
and 1 table.

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D234/D308

ASSOCIATION: Institut energetiki i elektrotekhniki AN  
Litovskoy SSR (Institute of Power and  
Electrical Engineering, AS, Lithuanian SSR)

SUBMITTED: March 6, 1962

JA

Card 3/3

Calculation of heat loss .. S/236/62/000/003/004/004  
D234/D308

$$\alpha(x)_{\phi=1} = \frac{2}{3} \alpha(x)_{\phi=0} \cdot \frac{\Gamma(2/3) \Gamma(2/3)}{\Gamma(2/3 + 2/3)} \quad (16)$$

For bodies of arbitrary shape with constant temperature of the wall

$$Nu_x = 0.332 \chi(\phi) Re_x^{0.5} Pr^{0.333} + 0.067\beta - 0.026\beta^2 \quad (30)$$

with an accuracy of  $\pm 3\%$ , and if the surface temperature changes exponentially,

$$Nu_x = 0.332 \chi(\phi, \theta) Re_x^{0.5} Pr^{0.333} + 0.067\beta - 0.026\beta^2 \quad (33)$$

$\chi(\phi)$  is called the dynamical restoration coefficient,  $\chi(\phi, \theta)$  the universal restoration coefficient; both are plotted. The results are found to agree with experiments carried out by the authors on a plate in longitudinal flow. There are 5 figures

Card 2/3

S/236/62/000/003/004/004  
D234/D308

AUTHORS: Makaryavichyus, V.I., Zhyugzhda, I.I. and  
Zhukauskas, A.A.

TITLE: Calculation of heat loss of curved surfaces  
in the case of laminar boundary layer

SOURCE: Akademiya nauk Litovskoy SSR, Trudy. Seriya  
B, no. 3, 1962, 191 - 201

TEXT: The heat loss coefficient is determined for  
a wedgeshaped body, introducing the angle coefficient  $\beta = 2\sigma/\sigma + 1$   
( $\sigma$  being Euler's number) and assuming a temperature distribution  
 $T_0 x^{\sigma}$ . The results are

$$\alpha(x)_{\sigma=0} = \frac{4}{3} \alpha(x)_{\sigma=0} \cdot \frac{\Gamma(84/3) \Gamma(2/3)}{\Gamma(84/3 + 2/3)} \quad (15)$$

and

Card 1/3

Potential distribution ...

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D234/D308

The velocity distribution in the smallest section is

$$U_E = \varepsilon U = \varepsilon w_0 \left[ \frac{s^2+1}{s^2-3} \left( \frac{r_{0y}^2}{r_0^4} + \frac{r_{1y}^2}{r_1^4} + \frac{r_{2y}^2}{r^4} \right) + 1 \right] . \quad (12) \quad /c$$

There are 3 figures and 3 tables.

ASSOCIATION:

Institut energetiki i elektrotehniki AN  
Litovskoy (Institute of Power and Electrical  
Engineering, AS Lithuanian SSR)

SUBMITTED:

March 6, 1962

Card 2/2

S/236/62/000/003/003/004  
D234/D308

AUTHORS: Makaryavichyus, V.I. and Zhukauskas, A.A.

TITLE: Potential distribution of velocities in the case of transverse hydrodynamic flow past a single row of cylinders

SOURCE: Akademiya nauk Litovskoy SSR. Trudy. Seriya B, no. 3, 1962, 183 - 188

TEXT: The row of cylinders is considered as a system of dipoles whose centers coincide with the axes of the cylinders. A formula is derived for the total velocity in the case of three dipoles. A correcting factor is required in order to reach agreement with experiment. The tangential velocity on the surface of a cylinder is:

$$w_t = \varepsilon w_0 \left\{ \frac{s^2+1}{s^2-3} \left[ \sin \varphi + \frac{(s^2+1)\sin \varphi - 2s}{r_1^4} + \frac{(s^2+1)\sin \varphi + 2s}{r_1^4} \right] + \sin \varphi \right\} \quad (13)$$

Card 1/2

MAKARIAVICHYUS, V. I.[Makarevicius, V.]; ZHUKAUSKAS, A. A.[Zukauskas, A.]

Investigation of heat transmission of in-line plain tube banks with  
transverse liquid flow. V. I. Makariavichius, A. A. Zhukauskas.  
Liet ak darbai no.3:231-241 '61.

1. Institut energetiki i elektrotekhniki Akademii nauk Litovskoy SSR.

MAKARYAVICHUS, V. I., SHLANCHYAUSKAS, A. A., and ZHUKAUSKAS, A. A.

"On Heat Transfer of a Bundle of Smooth Tubes in a Cross Flow  
of a Liquid."

Report submitted for the Conference on Heat and Mass Transfer,  
Minsk, BSSR, June 1961.

MAKARYAVICHYUS, V.I. [Makarevicius, V.]; ZHUKAUSKAS, A.A. [Zukauskas, A.]

Hydraulic resistance of corridor plane-pipe clusters in a transverse  
isothermic liquid flow. Liet ak darbai B no.3:155-163 '60.  
(EEAI 10:3)

1. Institut energetiki i elektrotekhniki Akademii nauk Litovskoy SSR.  
(Fluids)



SOV/124-58-11-12727

The Heat Transmission of "Corridor"-type Tube Banks (cont.)

30-40%. The heat rejection of the first row equals that of a single tube. Formulas are obtained for the calculation of the heat transmission of tubes in a "corridor"-type bank to a transverse fluid flow.

Authors' résumé

Card 2/2

SOV/124-58-11-12727

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 114 (USSR)

AUTHORS: Zhukauskas, Makaryavichus, Indryunas, Shlanchauskas [Žukauskas, A., Makarevičius, V., Indriūnas, A., Šlančiauskas, A.]

TITLE: The Heat Transmission of "Corridor"-type Tube Banks to a Transverse Fluid Flow (Teplootdacha koridornogo puchka trub v poperechnom potoke zhidkosti) in Lithuanian

PERIODICAL: Tr. AN LitSSR, 1957, Vol B, Nr 4, pp 143-150

ABSTRACT: Methods are set forth and results are submitted for an experimental investigation of the heat transmission of a ten-row "corridor"-type tube bank with  $S/d=2$  to a transverse flow of air and water. The investigations, which were performed for various directions of the heat flux and temperature gradient, comprised a Reynolds-number interval from  $3 \times 10^3$  to  $2 \times 10^5$ . It is established that the dependence of the heat transmission on the direction of the heat flux and the temperature gradient can be accounted for by the ratio  $P_j/P_w$  to the 0.25 power. It is determined that beginning with the third or fourth row the heat rejection does not vary and that it exceeds the heat rejection of the first row by

Card 1/2

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Regulation and operation control of ventilation equipment in public buildings and industrial plants. Gig.truda i prof.zab. 1 no.3:53-55  
My-Je '57. (MIRA 11:1)

1. Tekstil'nyy institut Ministerstva legkoy promyshlennosti SSSR.  
(VENTILATION)